# AUTHOR INDEX

Allen, J. W., 121
Ammar, A., 353
Antic-Fidancev, E., 167, 391
Arko, A. J., 133

Becker, R. W., 273
Begun, G. M., 193
Beitz, J. V., 159
Bianconi, A., 97
Boltich, E. B., 91
Borchers, J., 17
Boukbir, L., 327
Brito, H. F., 267

Capasso, C., 133
Carnall, W. T., 201, 339
Caro, P., 167, 181
Cascales, C., 369
Castellano, E. E., 273
Chan, D. K. T., 207
Chandhok, V. K., 91
Chopra, D. R., 413
Chourasia, A. R., 413
Chrysochoos, J., 247, 253, 259
Comins, J. D., 375
Croat, J. J., 7

Da Gama, A. A. S., 339
Darder, A., 59
Dartyge, E., 97
De Azevedo, W. M., 387
De Sa, G. F., 339, 387
Dexpert, H., 387
Ding, Y.-Y., 393
Dixon, J. M., 381
Doumerc, J. P., 333
Du, R., 17
Dunlap, D. D., 133

Eid, M. A., 59
El-Behery, K. M., 59
Ellis, W. P., 121
Erwin, R. W., 17
Eyal, M., 223

Fakhry, A. A., 59
Flank, A. M., 97
Fluyt, L., 361
Flynn, C. P., 17
Fontaine, A., 97

Gibbs, D., 109
del Giudice, M., 133
Goodman, G. L., 201, 339
Görller-Walrand, C., 339

Hammond, R. M., 311
Hedrick, J. B., 79
Huang, H.-S., 85

Jayasankar, C. K., 281 289
Jørgensen, C. K., 147, 223
Judd, B. R., 1
Jursich, G. M., 201

Kalisky, Y., 227
Kang, J. S., 121
Koelling, D. D., 133
Kreszowski, D. H., 247
Krill, G., 97
Krupa, J. C., 167
Kumar, A. S., 357
Kuo, S. C., 173

Lagarde, P., 97
Lakshman, S. V. J., 357, 363
Lam, S., 201
Laurent, Y., 327
Le Flem, G., 327, 333
Lee, B. W., 121
Lee, Y. F., 259
Lemaitre-Blaise, M., 167, 391
Li, F.-Y., 399, 405
Li, J.-H., 399, 405
Li, X.-C., 405
Lin, J.-H., 233
Lindau, I., 121
Liu, J.-C., 85
Luo, L., 187
Luo, L.-T., 405

Ma, B. M., 91
Malta, O. L., 387
Maple, M. B., 121
Marcano, C. M., 369
Marchand, R., 327
Maurer, M., 97
Metcalf, D. H., 321
Moorthy, L. R., 363
Moran, D. M., 297
Moune, O. K., 181

Nascimento, A. B., 267
Newman, D. J., 219
Ng, B., 219
Ngoepe, P. E., 375
Nyman, C., 223

Obermyer, R. T., 67
Olshavsky, M., 259

Parent, C., 327, 333
Partin, D. L., 35
Peterson, J. R., 193
de Piante, A., 297
Piriou, B., 349
Porcher, P., 167, 339, 369

Qusti, A. H., 253

Rasines, I., 369
Reid, M. F., 207, 213, 219, 289, 311
Reisfeld, R., 223, 227
Rhyne, J. J., 17
Richardson, F. S., 281, 289, 297, 305, 311, 321

Saez-Puche, R., 369
Salamon, M. B., 17
Sankar, S. G., 67, 91
Schoene, K. A., 305
Seon, F. M., 73
Shen, Z.-X., 121
Sheng, D., 85
Shi, Q.-J., 399
Snitzer, E., 45
Song, Z.-F., 241
Spicer, W. E., 121

© Elsevier Sequoia/Printed in The Netherlands

Su, M.-Z., 233, 241
Subramanyam, Y., 363
Sullivan, J. C., 159

Thompson, L. C., 173
Tolentino, H., 97
Tourillon, G., 97
Tuszynski, J. A., 381

Urland, W., 151

Velu, E. M. T., 67
Vicentini, G., 267, 273

Waked, L., 79
Wallace, W. E., 67, 91
Wang, Y.-J., 241
Williams, C. W., 201
Wilmarth, W. R., 193

Yan, Y., 421
Yang, Y.-S., 187
Yeh, J. J., 121
Yeung, Y. Y., 213
Ying, R., 421

Zhang, J.-C., 327, 333
Zhang, Q.-H., 187
Zhao, W., 241
Zhu, G.-Z., 399
Zinner, L. B., 267, 273

# SUBJECT INDEX

Absorption spectra
structure and absorption and fluorescence spectra of $Eu(PyNO)_8(ClO_4)_3$, 173
studies on higher-derivative absorption spectra of Ce and Gd and their analytical applications, 421
Actinide spectra
interpretation of tetravalent actinide spectra, 201
Alloys
effects of rare earth alloys on structures and properties of grey cast iron, 85
Appearance potential
appearance potential study of $Nd_2Fe_{14}B$, 413

Boron
appearance potential study of $Nd_2Fe_{14}B$, 413
high-field magnetic properties of hot compacted extruded RE–Fe–B magnets, 91
manufacture of Nd–Fe–B permanent magnets by rapid solidification, 7
Brillouin scattering
Brillouin scattering investigation of the rare-earth fluorides at high temperatures, 375

Calculation
*ab-initio* calculation of intensity parameters for the system $Pr^{3+}$–$Cl^-$, 219
Catalysis
effects of some rare earth metals on the catalytic properties of RE forming catalysts, 399
studies of the surface behaviour and catalytic properties of Pt–Ce–$\gamma$-$Al_2O_3$, 405
Cerium
luminescence and excitation spectra of $Ce^{3+}$–$Tb^{3+}$ ions co-doped in the $LnMgB_5O_{10}$ system, 415
studies of the surface behaviour and catalytic properties of Pt–Ce–$\gamma$-$Al_2O_3$, 405
studies on higher-derivative absorption spectra of Ce and Gd and their analytical applications, 421
Chalcogenides
Pb–RE–chalcogenides grown by molecular beam epitaxy, 35
Circular dichroism
circular dichroism of Er(III) in trigonal $Na_3[oxydiacetate)_3]\cdot 2NaClO_4\cdot 6H_2O$, 305
Cobalt
$PrCo_5$-based high-energy-density permanent magnets, 67
Complexes
comments on the role of relativistic crystal field effects with applications to 4f and 3d ion complexes, 381
Computer simulation
computer simulation of the $^5D_J$ levels of $4f^6$, $Eu^{3+}$, 181
Copper
luminescence of the $Cu^+$ ion in $CuLaO_2$, 333
Corrosion protection
rare earths for materials corrosion protection, 73
Cross-relaxation
cross-relaxation of the $^1G_4$ state of $Tm^{3+}$ in $POCl_3$:$SnCl_4$, 253
Crystal field analysis
crystal field analysis and electric dipole intensity parameters for Ho in $Na_3[Ho(oxydiacetate)_3]\cdot 2NaClO_4\cdot 6H_2O$, 297
Crystal field effect
comments on the role of relativistic crystal field effects with applications to 4f and 3d ion complexes, 381
crystal field effect and paramagnetic susceptibility of rare earth antimonates $Ln_3Sb_5O_{12}$, 369
Crystal field parameters
comparison of crystal field parameters for $Ln(C_2H_5SO_4)_3\cdot 9H_2O$ and

© Elsevier Sequoia/Printed in The Netherlands

$Na_3(Ln(C_4H_4O_5)_3)\cdot 2NaClO_4\cdot 6H_2O$ systems, 311

Dysprosium
optical activity of $Na_3[Dy(oxydiacetate)_3]\cdot 2NaClO_4\cdot 6H_2O$, 321

Electric dipole intensity
crystal field analysis and electric dipole intensity parameters for holmium in $Na_3[Ho(oxydiacetate)_3]\cdot 2NaClO_4\cdot 6H_2O$, 297
Electronic structure
electronic structure and coordination geometry of $Pr^{3+}$ doped rare earth trichlorides, 151
electronic structure of the quenched superconductivity materials $Y_{1-x}Pr_xBa_2Cu_3O_{7-\delta}$, 121
Energy parametrization
energy and intensity parametrization of the $Nd^{3+}$–$LiYF_4$ spectrum, 339
Erbium
circular dichroism of Er(III) in trigonal $Na_3[oxydiacetate)_3]\cdot 2NaClO_4\cdot 6H_2O$, 305
improved pulse operation of Ho(III) in YAG and YLF codoped by Tm(III) and Er(III), 227
Europium
computer simulation of the $^5D_J$ levels of $4f^6$, $Eu^{3+}$, 181
intensity parameters for $Eu^{3+}$ luminescence — tests of the superposition model, 207
laser-induced fluorescence studies of Eu-extractant complexes in organic phases, 159
normal vibration analysis of Eu(III) acetate hydrate I — the *NORVIB* program, 187
optical studies and microstructure of $Eu^{3+}$ doped fluoroborate glasses containing Ag particles, 387
site-selective excitation of Eu luminescence in Eu–EDTA solutions: an investigation of their structural and dynamical properties in the liquid and frozen states, 349
Exchange effects
exchange and magnetostrictive effects in rare earth superlattices, 17
Excitation spectra
luminescence and excitation spectra of $Ce^{3+}$–$Tb^{3+}$ ions codoped in the $LnMgB_5O_{10}$ system, 393

Fiber lasers
rare earth fiber lasers, 45
Fluorescence
structural and fluorescence studies of compounds with general formula $[Ln(DMA)_3(H_2O)_6](CF_3SO_3)_3$ (DMA = *N*,*N*-dimethylacetamide, Ln = La–Tb), 273
Fluorescence spectra
structure and absorption and fluorescence spectra of $Eu(PyNO)_8(ClO_4)_3$, 173

Gadolinium
new paradoxes of spin-pairing energy in Gd(III), 147
studies on higher-derivative absorption spectra of Ce and Gd and their analytical applications, 421
Glasses
investigation of the structure of phosphorus oxynitride glasses by local structural probes, 327
optical studies and microstructure of $Eu^{3+}$ doped fluoroborate glasses containing Ag particles, 387
radiative transitions and lifetimes of Pr(III) in tellurite glasses, 223
spectroscopic investigation of the Pr(III) ion in certain ternary sulphate glasses, 363
spectroscopic studies on Pr(III), Nd(III), Er(III) and Tm(III) ions in fluoro-, boro- and acetophosphate glass environments, 357

Heavy fermions
band dispersion, photoemission satellites, and Fermi liquid behavior at $T > T_k$ in 5f heavy fermion systems, 133
High $T_c$ superconductors
electronic structure of the quenched superconductivity materials $Y_{1-x}Pr_xBa_2Cu_3O_{7-\delta}$, 121
valence characterization and *in situ* kinetics of $O_2$ uptake and removal in high $T_c$ superconductors by X-ray absorption spectroscopy, 97
Holmium
crystal field analysis and electric

dipole intensity parameters for Ho in $Na_3[Ho(oxydiacetate)_3]\cdot 2NaClO_4\cdot 6H_2O$, 297
improved pulse operation of Ho(III) in YAG and YLF codoped by Tm(III) and Er(III), 227

Intensity parameters
*ab-initio* calculation of intensity parameters for the system $Pr^{3+}$–$Cl^-$, 219
intensity parameters for $Eu^{3+}$ luminescence — tests of the superposition model, 207
Intensity parametrization
energy and intensity parametrization of $Nd^{3+}$–$LiYF_4$ spectrum, 339
Iron
appearance potential study of $Nd_2Fe_{14}B$, 413
effects of rare earth alloys on structures and properties of grey cast iron, 85
high-field magnetic properties of hot compacted extruded RE–Fe–B magnets, 91
manufacture of Nd–Fe–B permanent magnets by rapid solidification, 7

Lanthanides
comparison of crystal field parameters for $Ln(C_2H_5SO_4)_3\cdot 9H_2O$ and $Na_3(Ln(C_4H_4O_5)_3)\cdot 2NaClO_4\cdot 6H_2O$ systems, 311
interactions of electronically excited tetraphenyl-porphyrin (TPP) with trivalent lanthanide ions in DMF, 247
structural and fluorescence studies of compounds with general formula $[Ln(DMA)_3(H_2O)_6](CF_3SO_3)_3$ (DMA = *N,N*-dimethylacetamide, Ln = La–Tb), 273
Lanthanum
luminescence of the $Cu^+$ ion in $CuLaO_2$, 333
Laser-induced fluorescence
laser-induced fluorescence studies of Eu-extractant complexes in organic phases, 159
Lasers
improved pulse operation of Ho(III) in YAG and YLF codoped by Tm(III) and Er(III), 227

Local structural probes
investigation of the structure of phosphorus oxynitride glasses by local structural probes, 327
Luminescence
intensity parameters for $Eu^{3+}$ luminescence — tests of the superposition model, 207
luminescence and excitation spectra of $Cu^{3+}$–$Tb^{3+}$ ions codoped in the $LnMgB_5O_{10}$ system, 393
luminescence of the $Cu^+$ ion in $CuLaO_2$, 333
site-selective excitation of europium luminescence in Eu–EDTA solutions: an investigation of their structural and dynamical properties in the liquid and frozen states, 349

Magnetic properties
high-field magnetic properties of hot compacted extruded RE–Fe–B magnets, 91
Magnetostrictive effects
exchange and magnetostrictive effects in rare earth superlattices, 17
Mineral deposits
heavy minerals, including monazite, in Egypt's black sand deposits, 79
preliminary study on the vertical distribution of rare earths in an Egyptian phosphorite deposit, 59
Molecular beam epitaxy
Pb–RE–chalcogenides grown by molecular beam epitaxy, 35
Monazite
heavy minerals, including monazite, in Egypt's black sand deposits, 79

Neodymium
appearance potential study of $Nd_2Fe_{14}B$, 413
energy and intensity parametrization of the $Nd^{3+}$–$LiYF_4$ spectrum, 339
manufacture of Nd–Fe–B permanent magnets by rapid solidification, 7
spectral studies of Nd complexes containing tetramethylurea (TMU) as ligand, 267
Normal vibration analysis
normal vibration analysis of Eu(III) acetate hydrate I — the *NORVIB* program, 187

Optical properties
optical activity of $Na_3[Dy(oxydiacetate)_3]\cdot 2NaClO_4\cdot 6H_2O$, 321
optical and photoredox properties of small colloidal semiconductor particles in the presence of trivalent lanthanide ions, 259
optical studies and microstructure of $Eu^{3+}$ doped fluoroborate glasses containing Ag particles, 387
optical study of the $Y_3Ga_5O_{12}$–$Pr_3Ga_5O_{12}$ system, 167

Paramagnetic susceptibility
crystal field effect and paramagnetic susceptibility of rare earth antimonates $Ln_3Sb_5O_{12}$, 369
Permanent magnets
manufacture of Nd–Fe–B permanent magnets by rapid solidification, 7
$PrCo_5$-based high-energy-density permanent magnets, 67
Phosphorite deposits
preliminary study on the vertical distribution of rare earths in an Egyptian phosphorite deposit, 59
Phosphors
synthesis and characterization of some PSL phosphors, 241
Photoemission
band dispersion, photoemission satellites, and Fermi liquid behavior at $T > T_K$ in 5f heavy fermion systems, 133
Photoredox properties
optical and photoredox properties of small colloidal semiconductor particles in the presence of trivalent lanthanide ions, 259
Platinum
studies of the surface behaviour and catalytic properties of Pt–Ce–$\gamma$-$Al_2O_3$, 405
Polarized absorption spectra
polarized absorption spectra of hexakis(antipyrine)lanthanide(III) tri-iodide crystals: centrosymmetric-to-non-centrosymmetric phase transitions, 281
Praseodymium
*ab-initio* calculation of intensity parameters for the system $Pr^{3+}$–$Cl^-$, 219
electronic structure and coordination geometry of $Pr^{3+}$ doped rare earth trichlorides, 151
$PrCo_5$-based high-energy-density permanent magnets, 67
radiative transitions and lifetimes of Pr(III) in tellurite glasses, 223
spectroscopic studies of $PrCl_3$ and $PrBr_3$ in the solid state, 193

Rapid solidification
manufacture of Nd–Fe–B permanent magnets by rapid solidification, 7

Silver
optical studies and microstructure of $Eu^{3+}$ doped fluoroborate glasses containing silver particles, 387
Site-selective excitation
site-selective excitation of europium luminescence in Eu–EDTA solutions: an investigation of their structural and dynamical properties in the liquid and frozen states, 349
Spectroscopy
early days in the spectroscopy of tripositive RE ions, 1
spectral studies of neodymium complexes containing tetramethylurea (TMU) as ligand, 267
spectroscopic investigation of Pr(III) ion in certain ternary sulphate glasses, 363
spectroscopic studies of $PrCl_3$ and $PrBr_3$ in the solid state, 193
spectroscopic studies on Pr(III), Nd(III), Er(III) and Tm(III) ions in fluoro-, boro- and acetophosphate glass environments, 357
Spin-correlated crystal-field
phenomenological spin-correlated crystal-field analyses of energy levels in $Ln^{3+}$:$LaCl_3$ systems, 289
Spin-pairing energy
new paradoxes of spin-pairing energy in Gd(III), 147
Structural properties
structural and fluorescence studies of compounds with general formula $[Ln(DMA)_3(H_2O)_6](CF_3SO_3)_3$ (DMA = *N*,*N*-dimethylacetamide, Ln = La–Tb), 273
structure and absorption and fluorescence spectra of $Eu(PyNO)_8(ClO_4)_3$, 173
Superconductivity
electronic structure of the quenched superconductivity materials $Y_{1-x}Pr_xBa_2Cu_3O_{7-\delta}$, 121

valence characterization and *in-situ* kinetics of $O_2$ uptake and removal in high $T_c$ superconductors by X-ray absorption spectroscopy, 97
Superlattices
exchange and magnetostrictive effects in RE superlattices, 17
Synchrotron scattering
synchrotron X-ray scattering studies of RE metals, 109

Tellurite glasses
radiative transitions and lifetimes of Pr(III) in tellurite glasses, 223
Terbium
luminescence and excitation spectra of $Ce^{3+}$–$Tb^{3+}$ ions codoped in the $LnMgB_5O_{10}$ system, 393
Thermoluminescence
thermoluminescence of RE-doped BaFCl crystals, 233
Thulium
cross-relaxation of the $^1G_4$ state of $Tm^{3+}$ in $POCl_3$:$SnCl_4$, 253
improved pulse operation of Ho(III) in YAG and YLF codoped by Tm(III) and Er(III), 227

X-ray absorption spectroscopy
valence characterization and *in-situ* kinetics of $O_2$ uptake and removal in high $T_c$ superconductors by X-ray absorption and spectroscopy, 97
X-ray scattering
synchrotron X-ray scattering studies of RE metals, 109